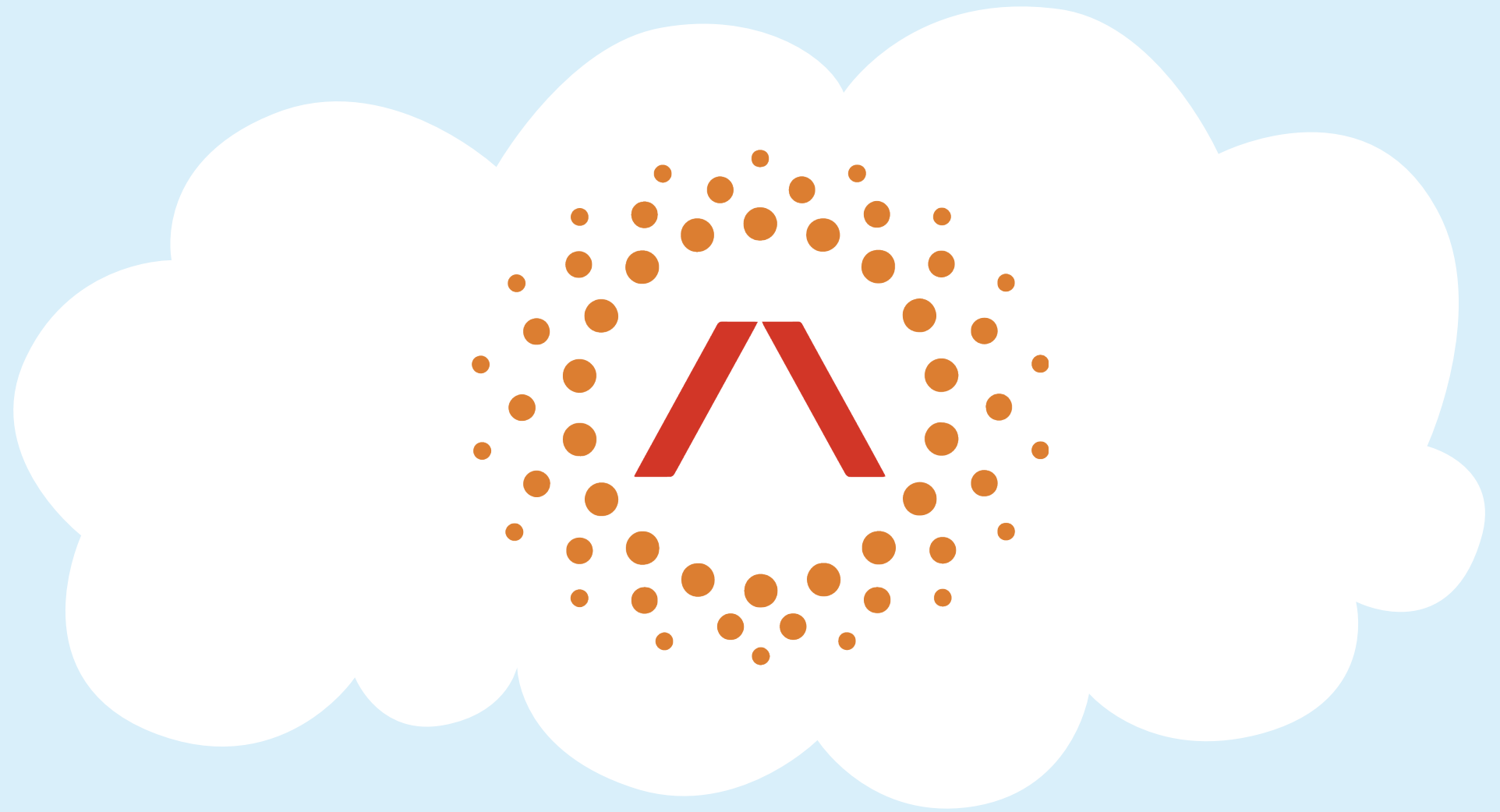
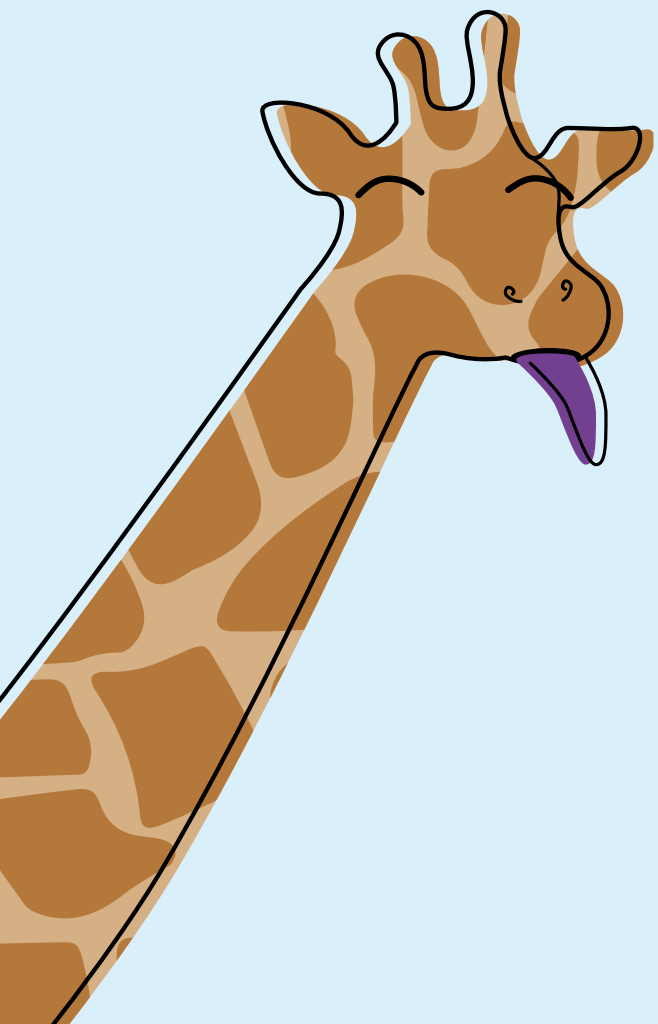




IMAGINATION
IS A
CAREER

STEAM DESIGN ACTIVITY

BIG IDEA

Introduce your class to the design process by having them design a new mode of transportation for a character of their choice.

TIME

approx. 90 minutes

MATERIALS

Blank paper (or printed worksheets from end of presentation)

Pencils

Coloring supplies (for step 4 of process)

LEARNING OUTCOMES

Recall the key attributes of their character

Analyze their character's specific transportation needs

Explain their design choices

Recall the general design process

Create a new design, as opposed to replicating things they've seen

ACTIVITY OVERVIEW

Use the first few slides to introduce the class to the concept of transportation design 5 minutes

Go through the example with Ralph, making sure to highlight the connections between Ralph's attributes / lifestyle (section 1) and the design decisions for his vehicle (sections 2 - 4) 10 - 15 minutes

Pass out paper, pencils and a worksheet guide to each table 2 minutes

Have students start by defining their character & its key attributes and then allow students to move through the steps of the process as they're ready—circulate and prompt kids by asking them questions about their designs / characters 50 minutes

In the last 10 - 15 minutes, allow students the opportunity to share their designs with the class, have them explain their design choices

TRY CHANGING IT UP!

SHORTER ACTIVITY

Instead of having students create their own characters, center the activity around Ralph. It may be helpful to print out some of the pages from the example that define Ralph's character & leave them for each table to reference as they design. For a much quicker activity, you may also choose to focus on a single step of the process, for instance interior features (step 2).

FULL WEEK ACTIVITY

Allow students to dive deeper by giving them about an hour per day to work on their designs. Use the first day to introduce the activity and have students define their characters. The next three days are dedicated to the next three steps respectively. The final day is dedicated to presenting ideas. Allow students to talk about their favorite parts of their designs.

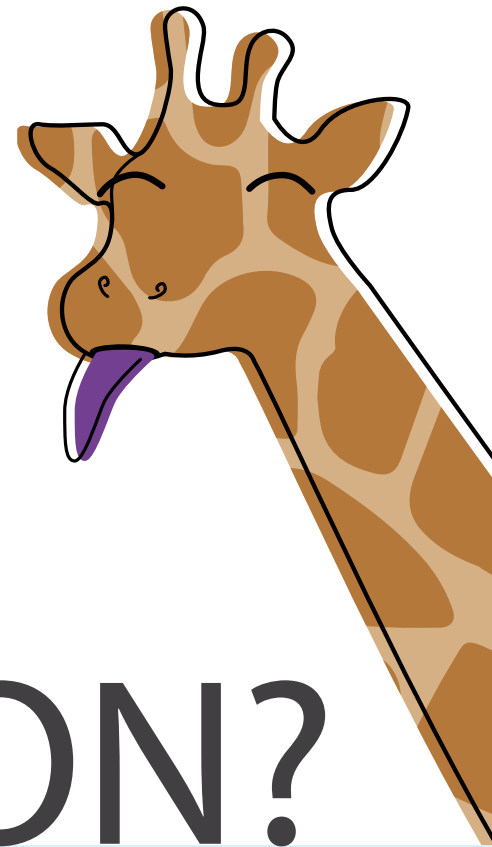
COLLABORATE & BUILD

Expand the activity by putting students into groups & having them build a model that combines the best of their design ideas. You can also make the entire activity group-based by assigning each team a character and asking them to work together to design a vehicle for their journeys.

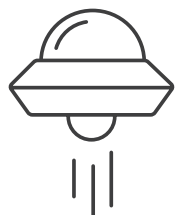
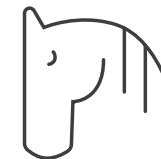
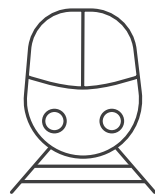
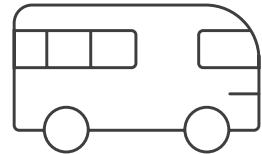
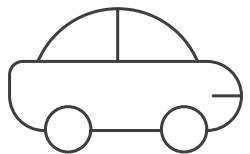


As an added challenge, you may want to have students consider how the vehicle would be fueled. What types of alternative energies could they use to make their designs "green"?

Transportation is about getting
from one place to another!



WHAT IS TRANSPORTATION?



Everyday it is the job of transportation designers to imagine how we might get from one place to another in the future.

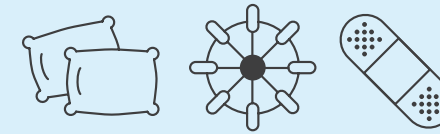
HOW DO YOU DESIGN IT?

1



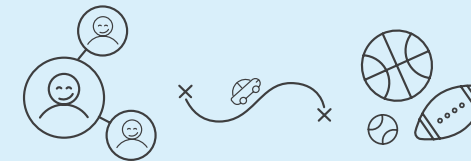
Learn about who you're designing for

2



Design for their needs

3



Design for their environment

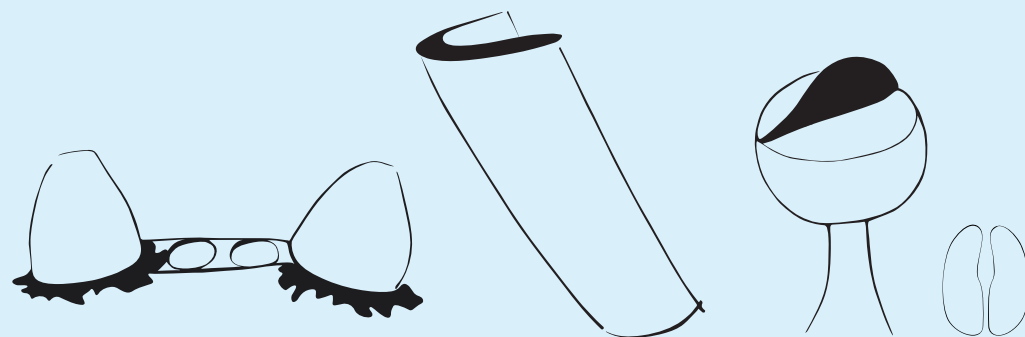
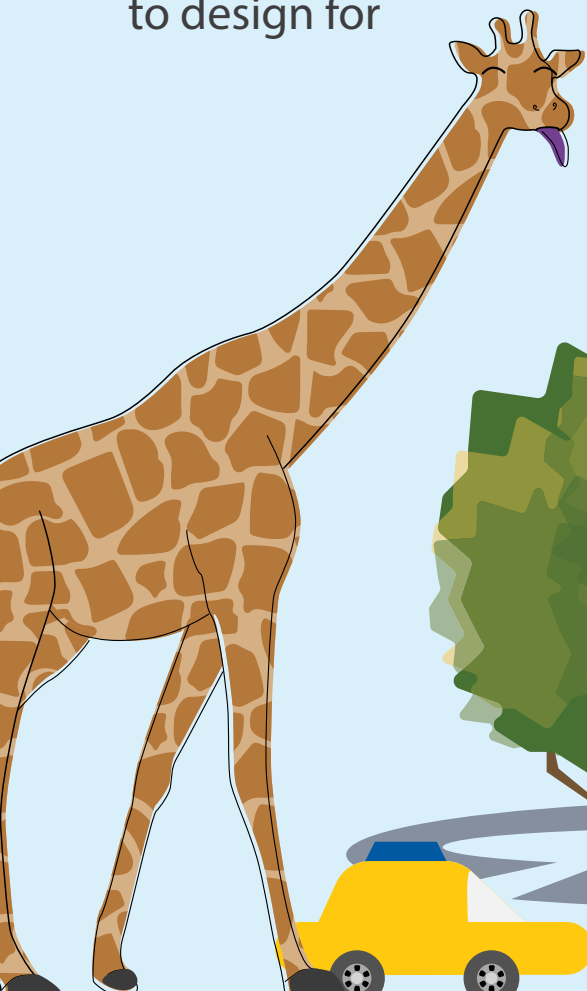
4



Design for their senses

ACTIVITY OVERVIEW

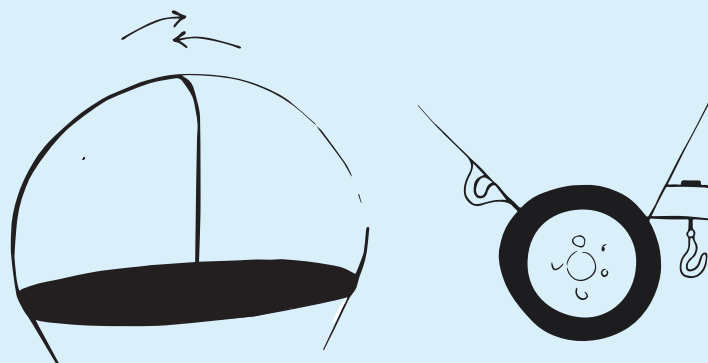
1.
Pick someone
to design for



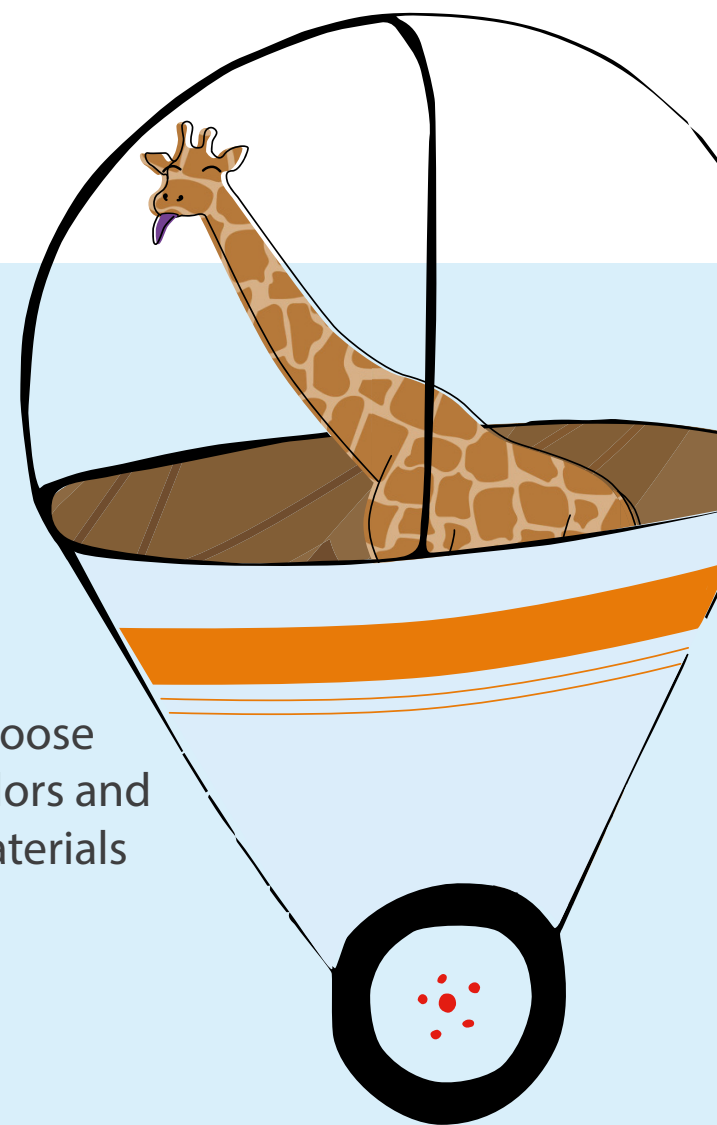
2.
Design interior features for your character



3.
Design the outside of the vehicle

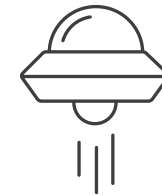
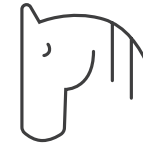
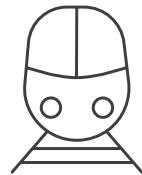
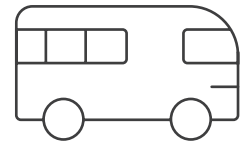
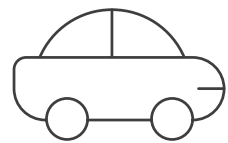
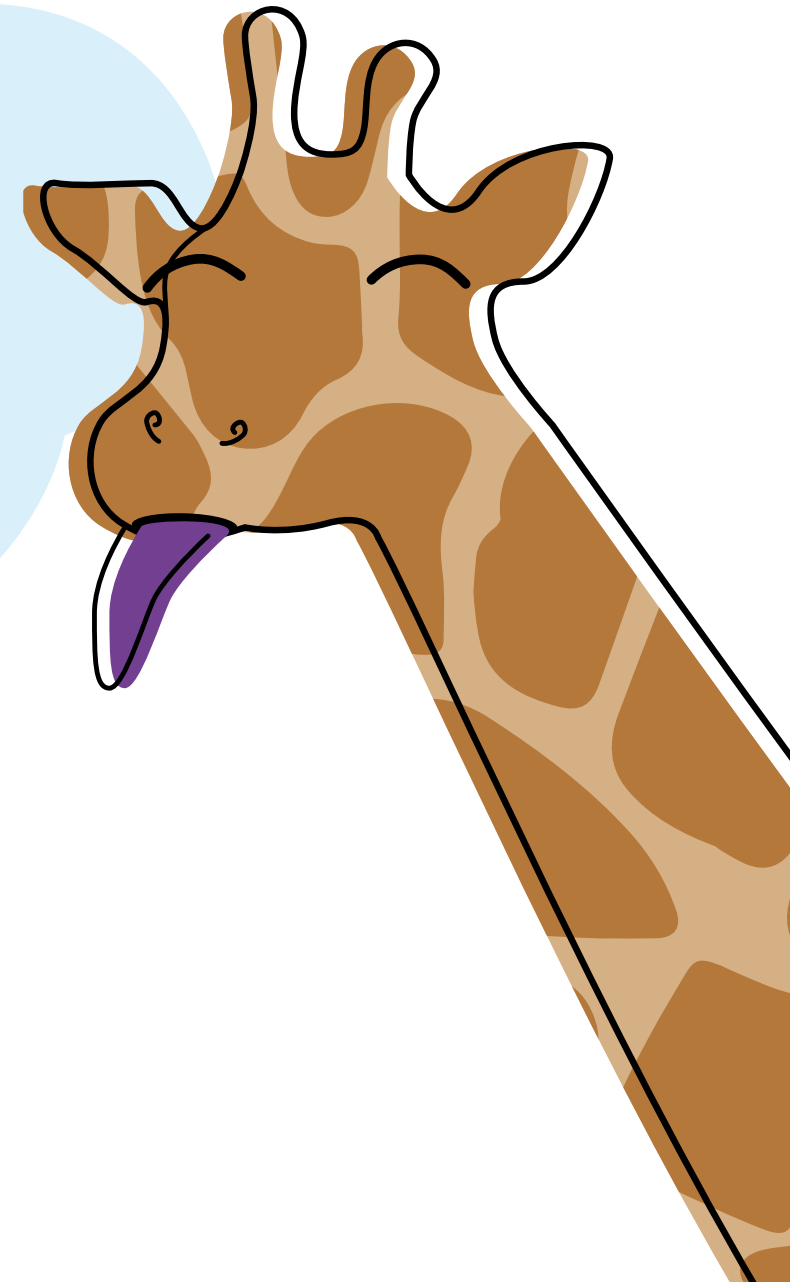


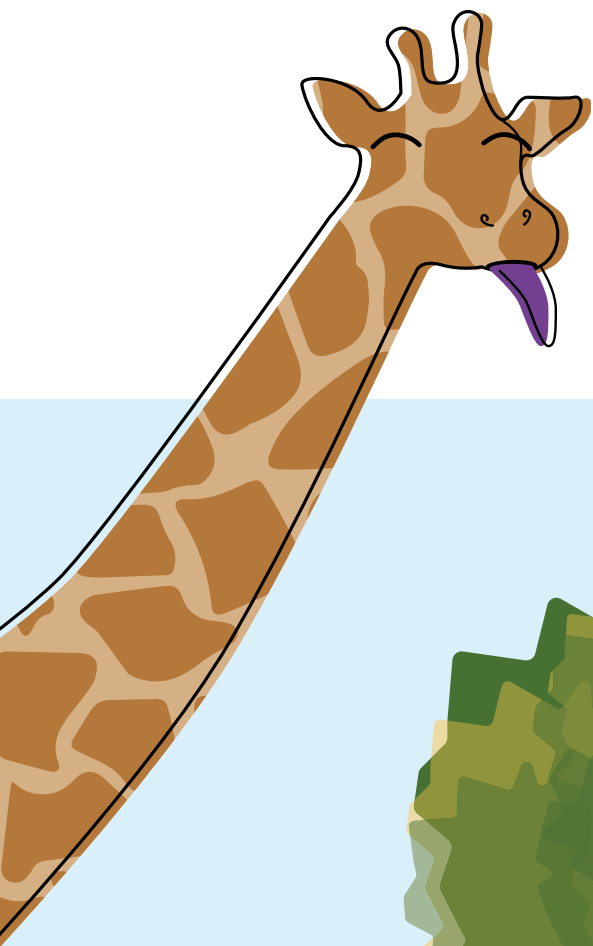
4.
Choose
colors and
materials



my name is ralph

Do you think you could design transportation for me?





ABOUT RALPH

Learning about Ralph will help us design the perfect car for him!

AGE

3 Years Old

LOCATION

Central Park, NYC

HEIGHT

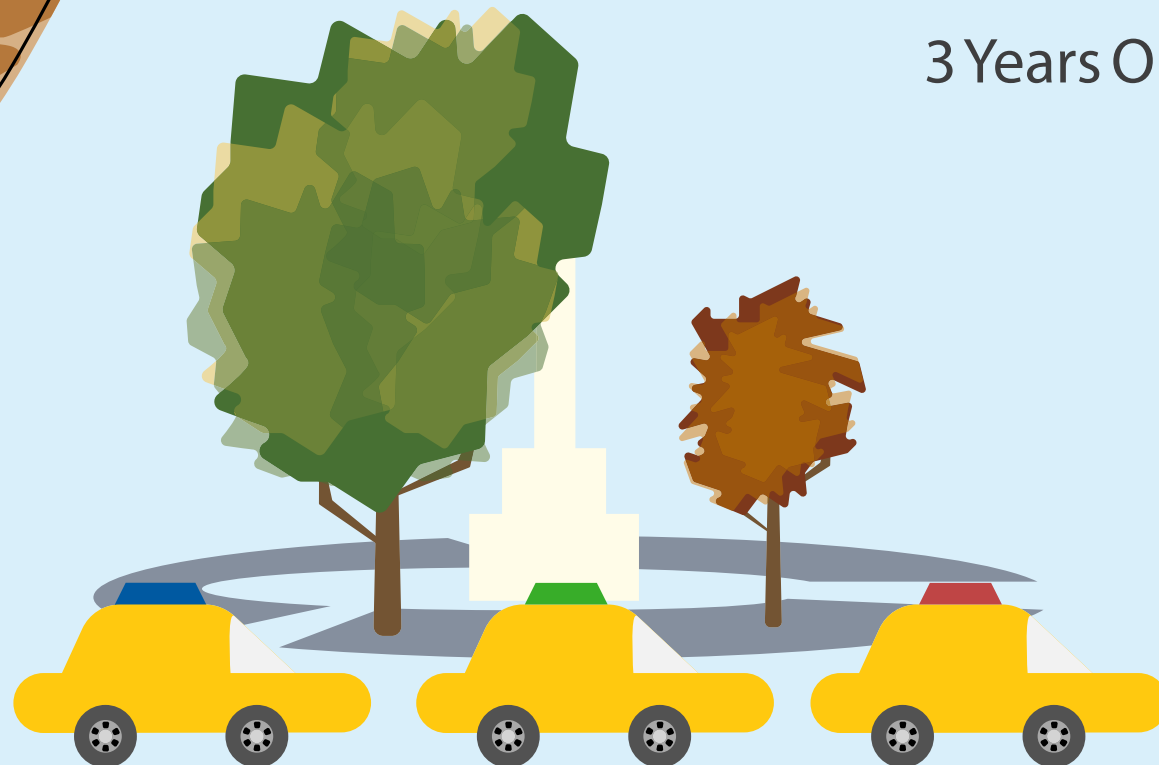
16 Feet

WEIGHT

2,100 Pounds

RALPH'S STORY

Ralph has lived in Central Park his whole life. Today he is 3 years old and his parents say that he is allowed to leave the park with his friends. He is a little scared because of all the traffic and loud noises but he thinks that with the right vehicle, he will feel safe and have fun.



RALPH'S PERSONALITY

Just like you & me, Ralph has things he likes and things he dislikes, these can guide what we design for him.

LIKES



TALL TREES hanging out with friends

bike rides being warm sushi **FAMILY**

SALAD long walks in the park spaghetti

SUNNY DAYS staying clean

his pet dog analyzing star charts

surfing the web **quiet places**

DISLIKES



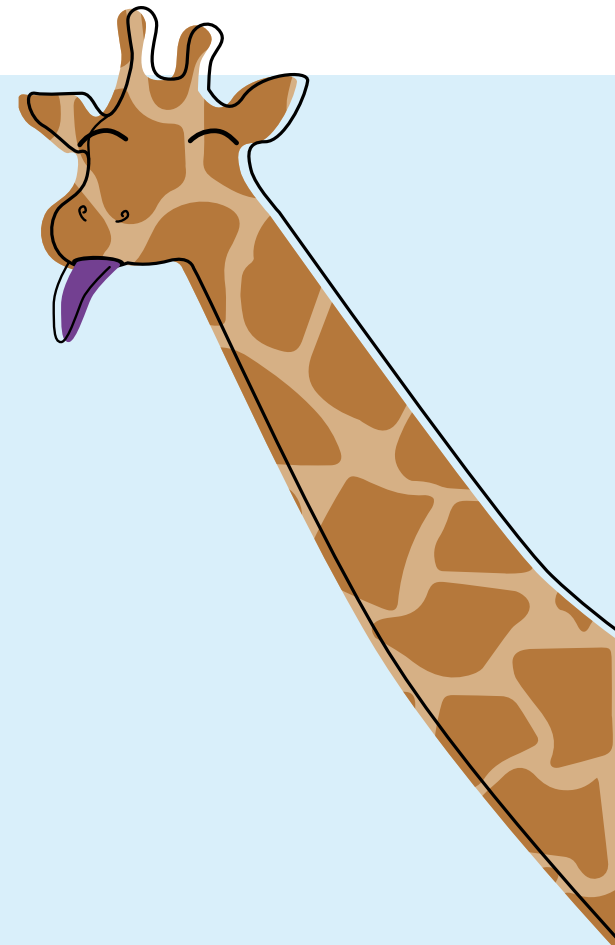
LIGHTENING wet grass winter

STORMS pineapple pizza seagulls

tourists **LOUD NOISES** motorcycles

mint chocolate chip ice cream **selfies** bees

BEING COLD when people litter



RALPH IS SPECIAL

Ralph's body is very different from yours! A traditional car would be impossible for him to drive. Let's take a look at some special features we can design to make driving easier and more comfortable for Ralph.

HOOVES

LONG NECK

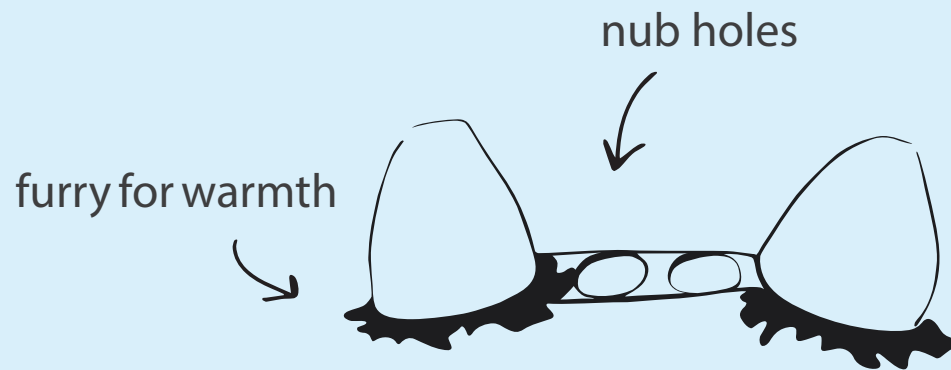
LITTLE HEAD NUBS

RALPH'S NEEDS

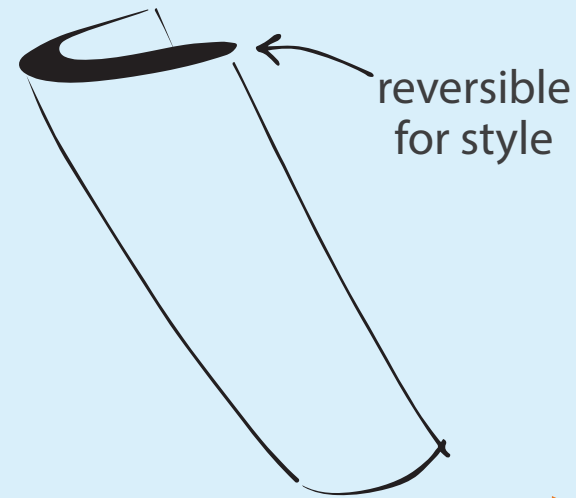


special FEATURES

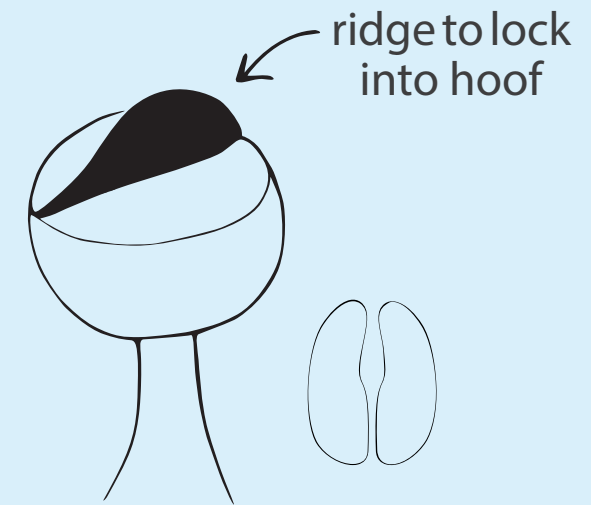
Here are ways to give Ralph more comfort, control & safety when he's on the move.



EARMUFFS
to make traffic quieter



NECK PILLOW
to prevent neck pain



JOYSTICK
to steer with hooves



Ralph's ENVIRONMENT

By thinking about how & where Ralph travels, we can make sure his car will fit his needs.

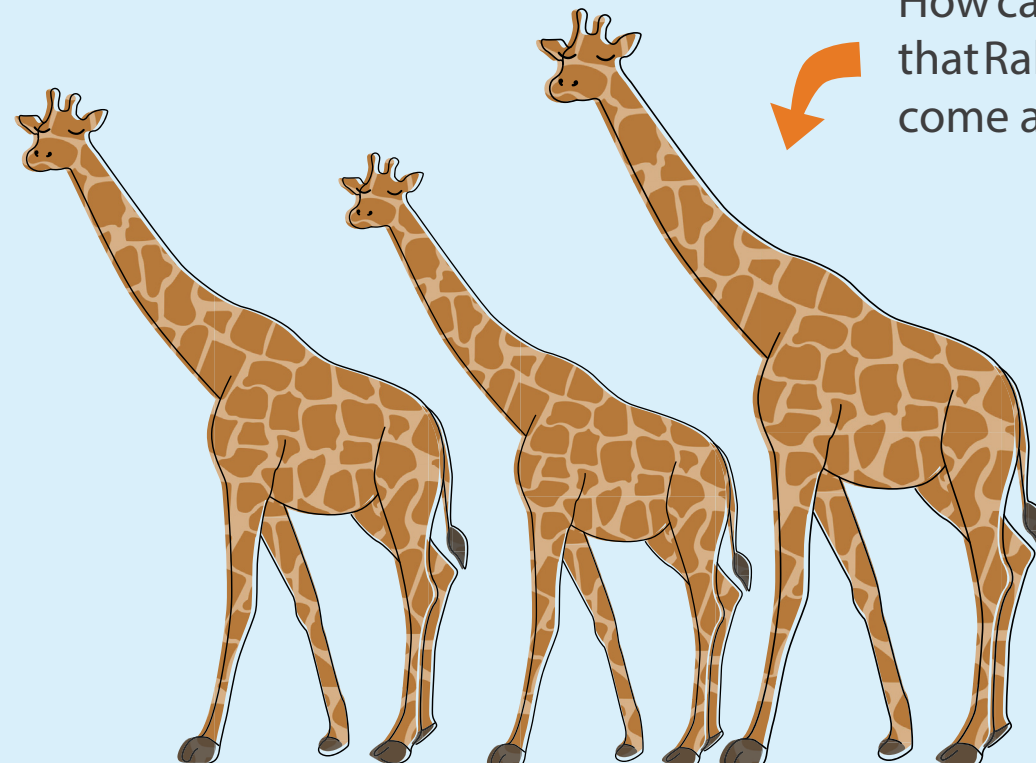
SEASONAL WEATHER

NYC has all four seasons, let's make sure Ralph's ride can handle traffic in rain, sun and snow!



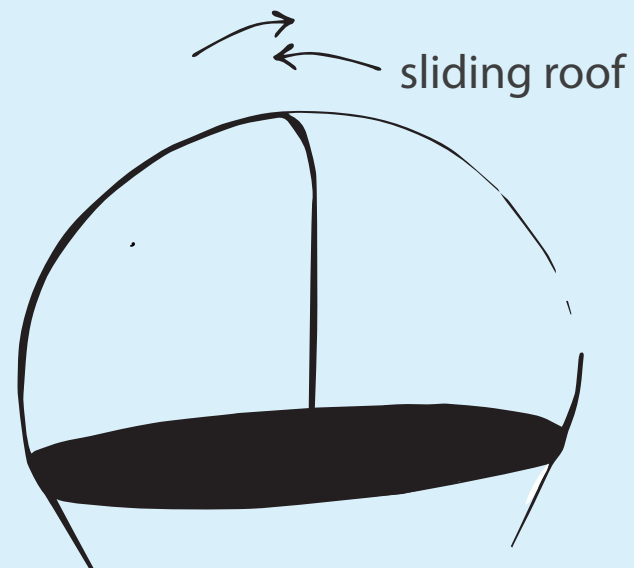
GOING PLACES WITH FRIENDS

How can we make sure that Ralph's friends can come along too?



SPECIAL FEATURES

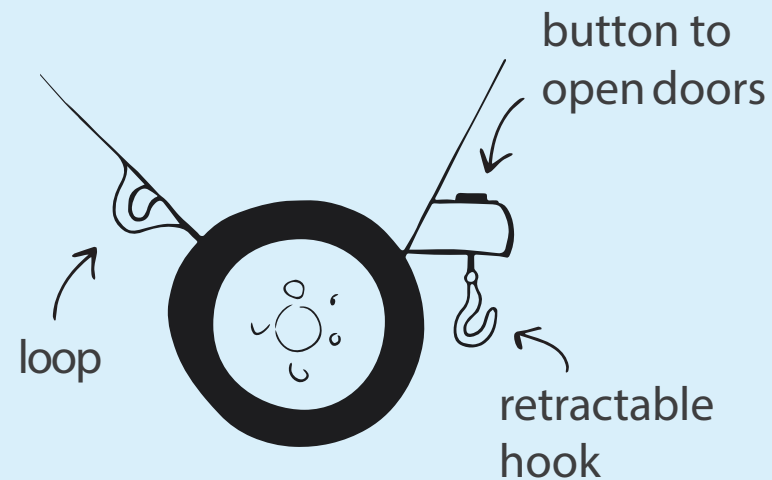
Here are ways to make Ralph's car better for his environment.



CONVERTIBLE



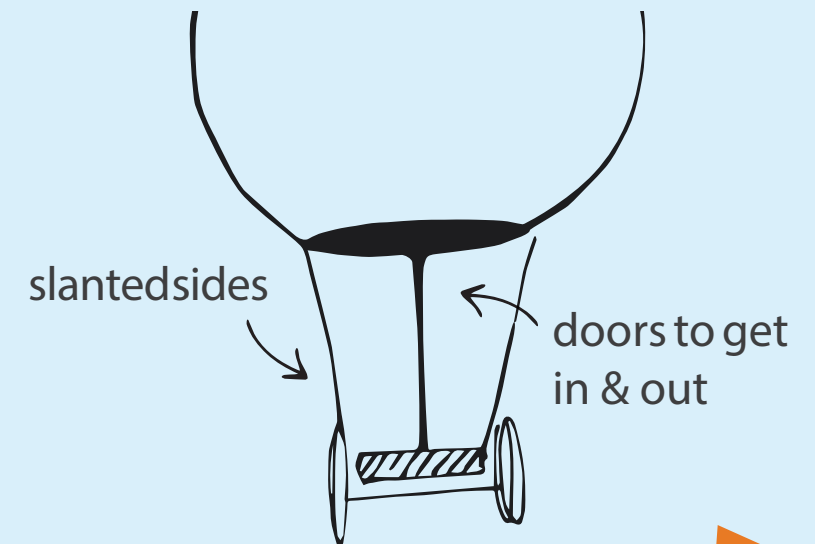
to enjoy the sun & avoid the rain



CONNECTORS



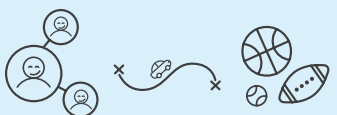
to link Ralph up with his friends



SLIM BASE



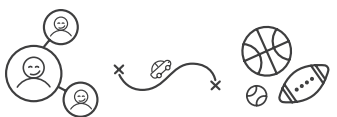
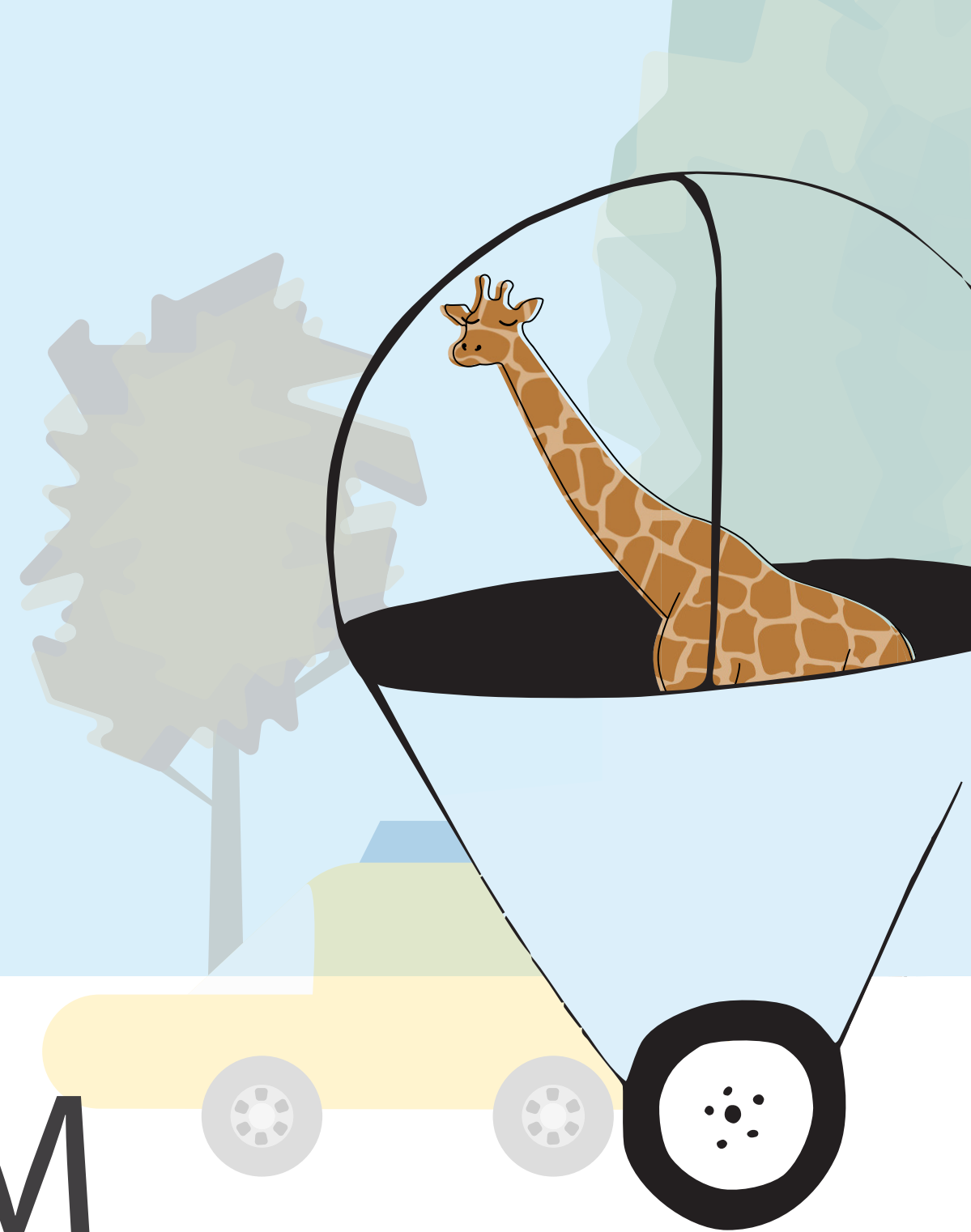
to take less space in NYC traffic



SAFE & FUTURISTIC SHAPE

The round dome feels safe and friendly, while the slanted sides and two-wheel design feels futuristic

PHYSICAL FORM

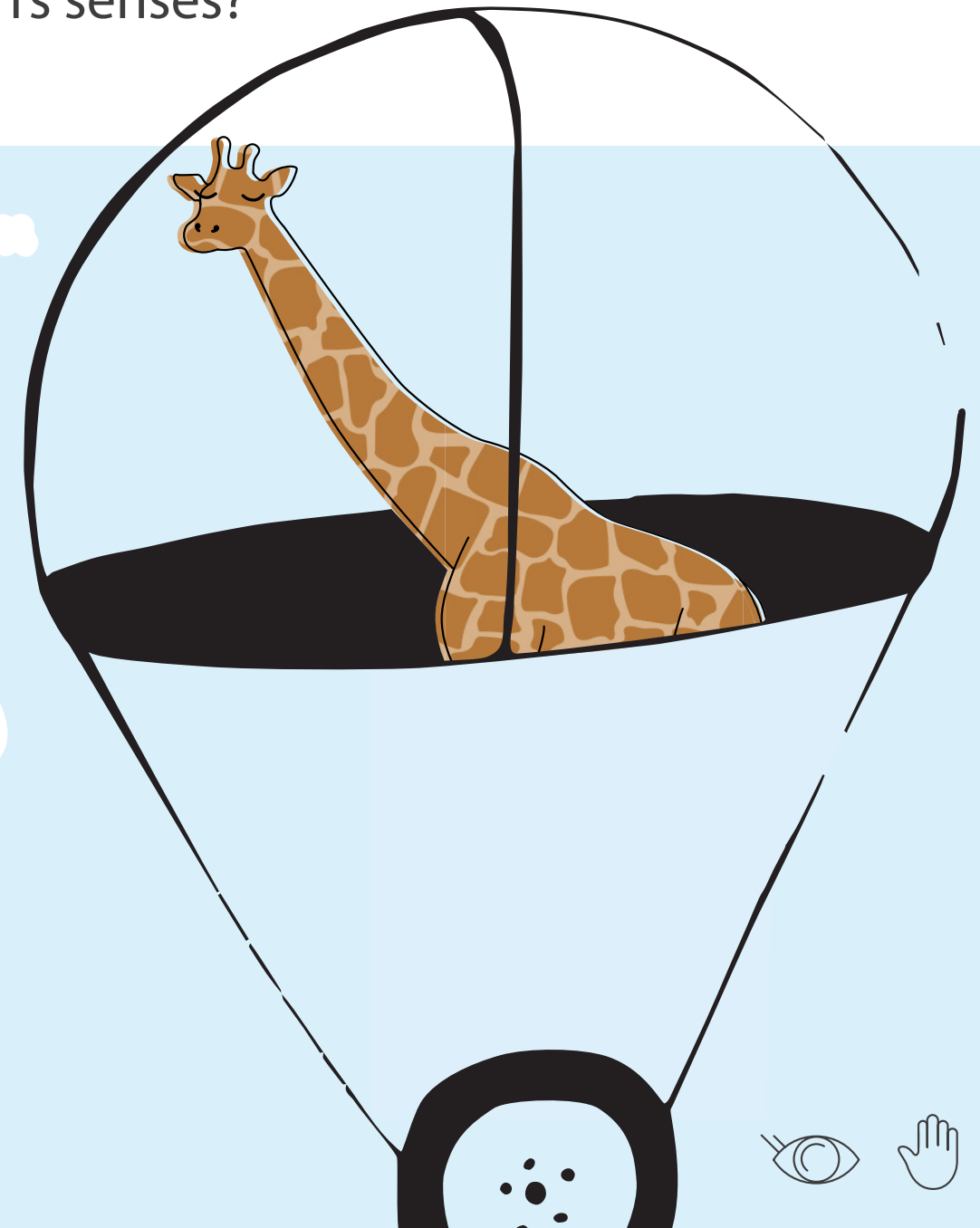
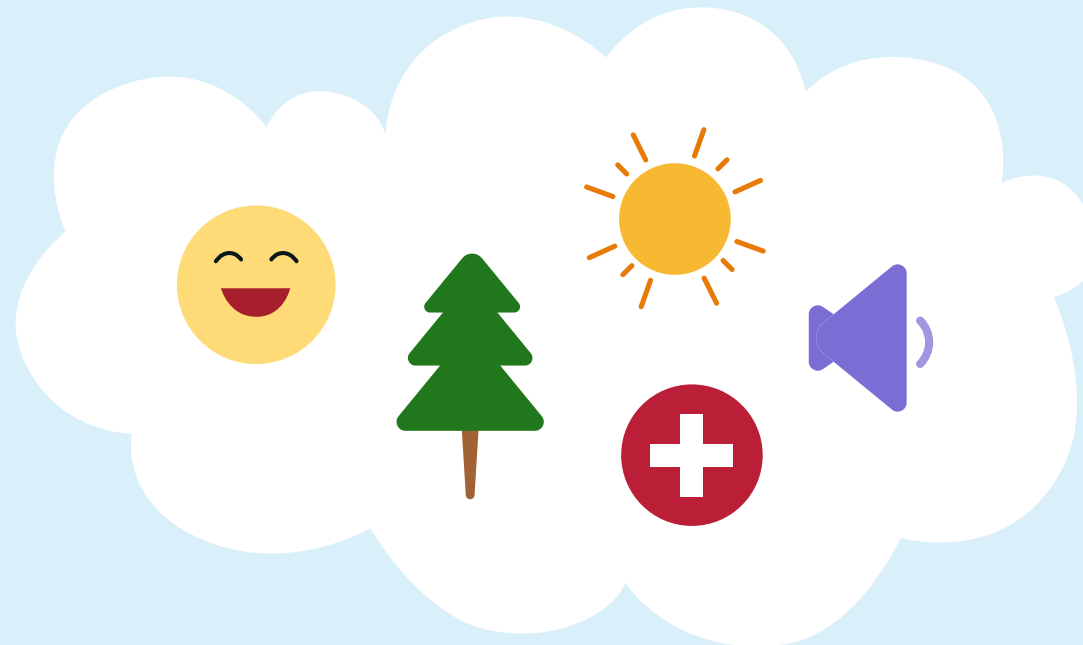


RALPH'S SENSES

How can we add colors, textures and smells that appeal to Ralph's senses?

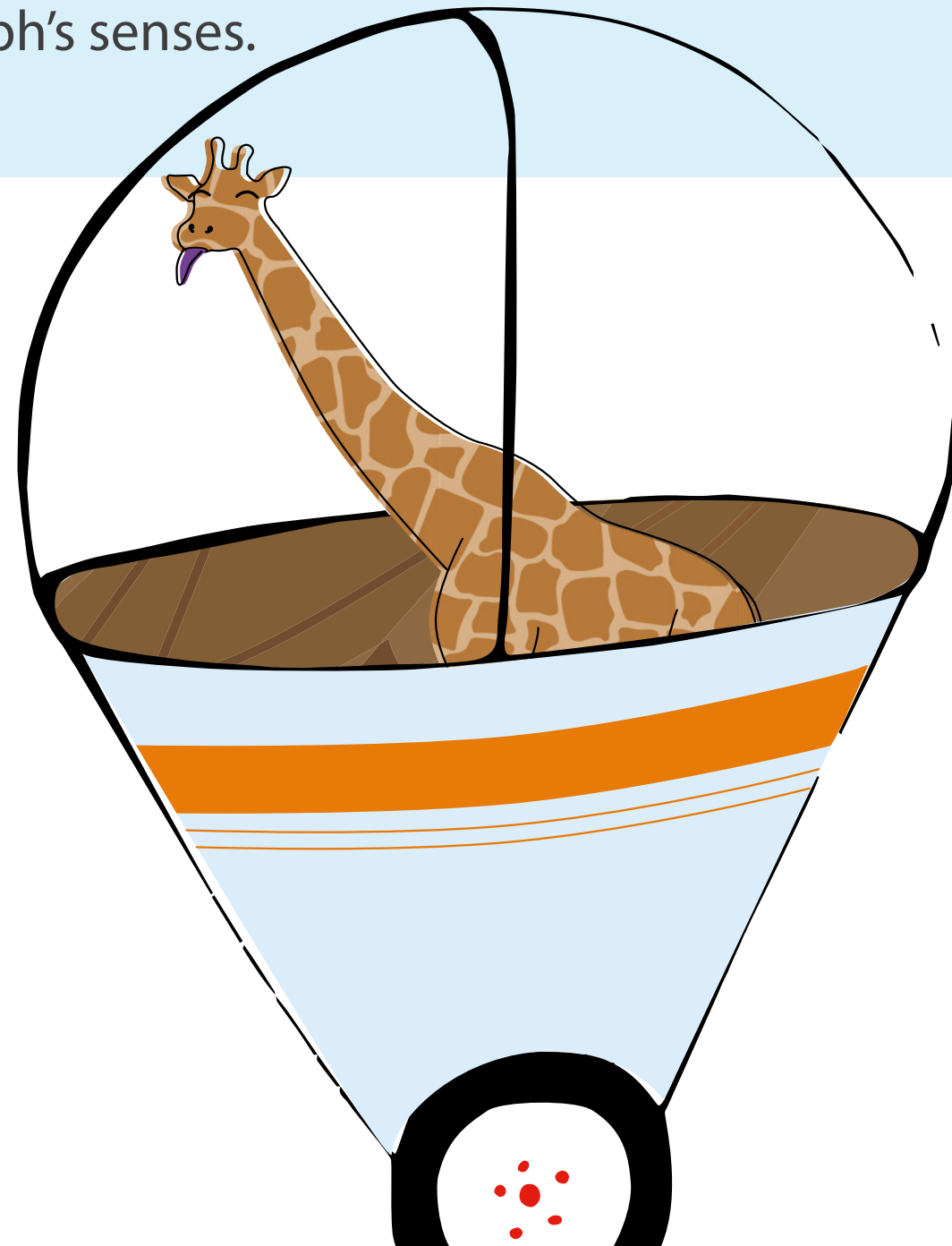
WHAT RALPH LIKES

By remembering what Ralph likes, we can choose colors, textures and smells just for him!



FINISHING TOUCHES

Here are ways to decorate the vehicle for Ralph's senses.



MAIN COLOR



← calm & safe

ACCENT 1



← warm & sunny

ACCENT 2



← fun & playful

INTERIOR



← fragrant wood
from tall trees



fun



sunny days



tall trees



safety



quiet & calm



NOW IT'S YOUR TURN
TO TRY!



TRY CREATING YOUR OWN CHARACTER TO DESIGN FOR.

What does your character look like? Draw a picture.

CHARACTER'S NAME _____

CHARACTER'S AGE _____

CHARACTER'S HOME _____

What setting will your character be driving in? Draw a picture.

LIKES What does your character like?

DISLIKES What does your character dislike?

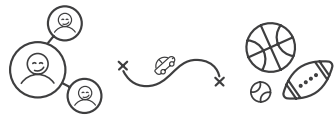


TRY DESIGNING INTERIOR FEATURES FOR YOUR CHARACTER'S VEHICLE.

Draw or write ways to make your character more comfortable.

Draw or write ways to make your character feel safe.

Draw your own version of a steering wheel for your character.



TRY DESIGNING THE OUTSIDE OF YOUR CHARACTER'S VEHICLE.

Draw the shape of the outside of your character's vehicle.

Draw the face of the vehicle.
Hint: Imagine the headlights as eyes.



TRY CHOOSING COLORS AND MATERIALS FOR YOUR CHARACTER'S VEHICLE.

Mix and match colors for your vehicle.

Write feelings or ideas that go with the colors you've picked.

Draw & write ideas for materials inside the vehicle.
Hint: Imagine how these will feel to touch and smell.

NOW YOU'RE A DESIGNER!

